

THE SCIENCE NEWS-LETTER

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EDITED BY WATSON DAVIS

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Vol. VIII. No. 247

Saturday, January 2, 1926.

AMERICAN CLIMATE CHANGING BUT FRIGID YEARS UNLIKELY

COMPLETE

W. D. & index

O. F.

By Henry Helm Clayton,
Former Chief Forecast Division Argentine Weather Service,
Now Cooperator with Smithsonian Institution
Relating Solar Conditions and Weather.

18247-272

Jan. 2 - Dec. 26, 1926

(Mr. Clayton, one of America's leading meteorologists, has spent the last ten years in studying world weather. When in Argentine he developed a method of forecasting based upon the changes in the amount of heat radiated from the sun.)

Our climate is slowly changing, decade by decade and century by century.

Although the temperature year by year fluctuates widely from the average there is an underlying upward trend in the northern United States and Canada like a slowly rising tide, while in the south of the United States the trend is the other way. Thus the contrast between the weather of the north and south is diminishing and the climate of the country as a whole is ameliorating.

It has been widely held that climate is a fixed quantity and that if we have a long enough period of observation, say 30, 50 or 100 years, we can average out the vagaries of the weather and determine the real climatic constant. That idea has given rise to another widely held view which is that, if the temperature or the rainfall, for example, is above normal for a few years, then later it will be as much below normal so that, in the course of time, the same average condition prevails.

These ideas are being abandoned by advanced students of the weather who hold that climate as well as weather is in a continuous state of change. Thirty, fifty or one hundred year averages have no meaning as indicating any fixed normal above and below which the temperature may oscillate but will again return to the same level. The investigations of A. E. Douglass, Gerard De Greer, Ellsworth Huntington and others have proved, that climate like the weather, or like the tides, is in a continuous process of ebb and flow and hundreds of even thousands of years may intervene before the same condition returns.

In intervals of time measured by many thousands of years the climate of a place like New England may change from a condition where ice covers the land surfaces to a depth of thousands of feet to conditions so mild as to be almost tropical.

Even in the course of several centuries the climate of New England may oscillate between cold conditions similar to those of Labrador and mild conditions similar to those which prevail on the coast of Virginia at the present time.

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Regular observations of the temperature at Boston and at New Haven extend back almost to colonial times. The observations at New Haven began in 1778 and in Boston in 1790. The two sets of records run almost parallel. The mean annual temperature of the past 50 years of observation is materially higher than those of the first 50 years. The oldest periods recorded were from 1782 to 1792 and from 1812 to 1823. Since then the trend of the temperature has been upward. The mean temperature of the ten years ending in 1925 is two and six tenths warmer than the mean of the ten years ending with 1821. If January and July are considered separately, it is found that the mean of the past ten Januaries has averaged four degrees warmer than the mean of the ten from 1812 to 1821 and the mean of the past ten Julys has averaged one and seven tenths degrees warmer.

This progressive rise of temperature is indicated by observations taken all over the northern part of the United States. In St. Paul, Minn. the temperature of the decade ending with 1925 averages two and eight tenths degrees warmer than that of the first decade of observations from 1859 to 1868.

In Canada the rise has been even more pronounced. At Winnipeg for the ten years ending with 1925 the average yearly temperature is four degrees higher than that of the first ten years of observation ending with 1884. The rise at other Canadian stations like Port Arthur and Dawson is even greater. In Alaska the period covered by the observations is comparatively short, but even these show a progressive advance in the mean temperature taken in ten year averages. But the existence of milder conditions in Alaska is best told by the retreat of the glaciers ever since they were first observed.

This climatic change is all the more remarkable because in the southern part of the United States the trend is the other way. At Charleston, S.C., the mean temperature of the ten years ending with 1920 is nearly two degrees colder than that of the first ten years of observation from 1823 to 1832, and there has been a distinct trend downward. At San Diego, Cal., at El Paso, Tex., and Key West, Fla. the trends are also downward.

These facts indicate that the contrast in temperature between the northern states and the southern is diminishing.

Will this continue with backward ebb and flows like an incoming tide until we are ushered into the mild temperature of an interglacial period?

Or are we now on the crest of some warmer period from which there will be a retreat?

No one at present can answer these questions, but one thing seems certain, since we are now in a long swing of milder years in the Northern United States and Canada, we can be reasonably sure that there will not be a return of the cold winters and cool summers which characterized the years around 1816 although it is quite possible that the temperature of the coming winter or coming summer may be below the mean of the past ten years.

But even the temperature of the year 1816, which has been called a year without a summer, was not so low as one might be led to infer from this description. The winter was cold, but not colder than many subsequent winters and the mean temperature of July of that year in New Haven was 65.8 degrees which may be compared with 67.0 in 1891 and 68.8 degrees in 1914.

An aspect of cold winters and hot summers which is rarely considered is that, if it is extremely cold or extremely warm in one part of the United States, it is likely to be the opposite in some other part.

It is a well-known fact that the American Medical Association has been successful in its efforts to secure the passage of the Pure Food and Drug Act, and the Federal Food, Drug, and Cosmetic Act. These laws have been a great benefit to the public, and have helped to protect them from the sale of adulterated and misbranded food and drugs. The American Medical Association has been a strong advocate of these laws, and has done much to bring about their passage. It is a credit to the Association that it has been able to secure the passage of these laws, and it is a credit to the public that they have been able to secure the passage of these laws.

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If the winter is extremely cold in the Atlantic coast states, it is likely to be mild in the Pacific coast states. If it is extremely cold in Canada and the northern part of the United States, it is likely to be warm in the extreme south. In general it is safe to predict a cold winter or a warm winter every winter for the United States, because it is almost sure to be warm or cold as predicted in some region or the other.

The progressive slow changes of climate described here must not, however, be confused with the rapid changes in which many of our older citizens believe. Occasionally one even hears a man in middle life say: "We do not have such weather or such snows now as occurred when I was a boy". Most of such opinions are to be ascribed to the changing condition of the person or his environment, rather than to changes of climate. A man remembers that there were occasional snows up to his waist when he was a boy while now there is rarely ever a snowfall that reaches to his knees; but he forgets that in the meantime he has grown twice as tall as when he was a boy. Moreover, the great increase in the capacity of the public to handle snow is forgotten. The roads and sidewalks are now clear where formerly it was necessary to break bodily through the snow drifts. Again one is at a more impressionable age when he is young and the world is new so that striking weather conditions leave a more lasting effect on the memory.

All these considerations need to be weighed when discussing changes of climate and it is better to trust to written records or to the records of the stratified clays and rocks than to human memory.

UNIVERSE NOT RUNNING DOWN SAYS CALIFORNIA CHEMIST.

In the course of the Silliman Lectures which Prof. Gilbert N. Lewis of the University of California is giving at Yale University he showed that the acceptance of the Einstein theory of relativity abolished the idea of the older physics that the universe is running down like a clock. According to views hitherto held it seemed that all forms of energy tended to become dissipated and eventually diffused throughout space, and this pointed inevitably to a period in the far future when the universe would come to a standstill forever. Any physical system left to itself would in the long run arrive at this state of run-downness, the degree of which scientists call entropy.

But Professor Lewis pointed out that according to the new geometry of the relativity theory this would not hold true, for the chance that the system would again return to its original state of high potential energy without any outside interference could be calculated, and that this event would necessarily ultimately take place. Thus all phenomena of the physical world are reversible in space-time. Past and future are therefore alike and there is no one-way drift of the universe as a whole.

But in our consciousness time appears to flow in one direction. Our vital processes are irreversible. Life proceeds in one direction from birth to death. Vital phenomena, therefore, do not come under the domain of the physical laws. All irreversible processes result from living things which are cheats in the game being played by physics and chemistry.

Professors Lewis's lecture is regarded as a blow to the mechanism theory which prevailed during the past century and is somewhat in line with the "Creative Evolution" of Henri Bergson.

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OLD STONE AGE RELICS FOUND IN MID-SAHARA.

By Alonzo W. Pond

Leader of Logan Sahara Expedition of Beloit College.

Aoulef Cheurf, Algeria, Dec. 12 (By native runner to In Salah, thence by wireless to Paris and by cable to United States).—Fifteen stone implements representing the oldest of Old Stone Age cultures, found in the midst of the vast emptiness of the Sahara, with no trace of human or animal bones and no sign of the fire-hearth of the ancient camping place—these are the first fruits of our hunt for remains of prehistoric man in the greatest of the World's deserts.

At a spot four miles northeast of Aoulef we have spent three days excavating an area fifty yards in diameter in the midst of a desert plain between distant remnants of an ancient plateau. According to Professor Caudez of the University of Algiers the plain is of Quaternary formation, representing the last geologic period before the coming of the great ice age. At a depth of from two inches to a foot the expedition found a curious sandstone formation with projections like stalagmites, as though a cave had once been there. At a depth of from four to eight inches of sandy clay overlying sandstone, in an absolutely undisturbed deposit, we found fifteen lower paleolithic implements. The first was a hatchet in the course of workmanship, covered with a crust of sandstone. We found other stone material, all of which has the characteristic shape and technique of the Chellean culture. The men of the Chellean age were of the low-browed Neanderthal race, coeval with the mammoth and the cave-bear. They knew the use of fire and made chipped flint implements, but had not yet learned to fit these with wooden shafts to make spears and axes.

Soundings and systematic excavations were made elsewhere in the neighborhood but these implements were all found in a small area ten yards in diameter. There was absolutely no indication of animal remains nor any hearth site. The place was discovered by Governor Maurice Reygasse purely by chance.

The nearest water was at a depth of thirty feet, irrigating tunnels passing at a distance of one hundred yards from our diggings. Debris in these tunnels does not show any materials similar to our finds.

This discovery constitutes the only lower paleolithic discovery known in the Sahara. Other stations of later epochs were noted on the surface at a distance, but are as yet unstudied.

The weather is sunny and bright, but wintry. Our arrival at Aoulef Cheurf came at the end of four days' camel-ride across the cold desert. When we reached the place we found that news of our coming had anticipated us, and we were received with all due ceremony by a committee of natives and prominent citizens. They had even turned out a native band in our honor -- six drums and one flute. It was a weird noise, but it was the best they had, and we received the salute in the spirit in which it was given.

CHEMIST APPROACHES SYNTHESIS OF LEPROSY CURING SUBSTANCE.

A simple derivative of chaulmoogric acid, one of the components of an oil used for centuries in the treatment of leprosy, has been made synthetically by Prof. Roger Adams of the University of Illinois. How he made this artificial substance was disclosed at a meeting of chemists held in Rochester, N.Y. recently.

Dr. Frederick B. Power of the U.S. Bureau of Chemistry, who first investigated the healing power of chaulmoogra oil more than twenty years ago, and who prepared the same substance from the natural oil that the Illinois professor has now prepared synthetically, said that future experiments would prove or disprove its value.

"No information is yet available regarding the physiological action of the synthetic compounds," Dr. Power said, "and their medicinal value in the treatment of leprosy can therefore not be determined until they have been submitted to appropriate tests."

The chaulmoogra oil from which these acids are produced that Dr. Rogers is attempting to make artificially, is squeezed from the seeds of an East Indian tree known to botanists as "*Taraktogenos kurzii*". The oil has a very disagreeable taste and is not easily tolerated by the patients because of the stomach disturbances it produces. By using modifications of the acids which Dr. Power first isolated, this difficulty was largely overcome, because these substances could be injected into the muscles.

Leprosy is an ancient disease which has not yet been conquered, for it is still widely distributed over all tropical and temperate regions. No nation is wholly free from it. The exact number of the cases in the world today is not known, but conservative estimates place it at from one to two millions.

In 1909 there were believed by different medical authorities to be between five hundred and two thousand cases in the United States. It is a slowly infecting disease, which, with better sanitary regulations and therapeutic methods, should be easily stamped out. In this connection the work of Dr. Adams will be watched with interest.

The Science News-Letter, Vol. VII, No. 244, Sheet 6, December 12, 1925, contained an article: "Comics Favorite Indoor Sport" which reported a statistical study of play preferences of American youth made by Dr. Harvey C. Lehman, who did work in the Department of Education at the University of Chicago. Dr. Lehman is now assistant professor of education at the University of Kansas and reported on his investigations before Section Q at the A.A.A.S. meeting at Kansas City recently. Dr. Harvey B. Lemon of the Ryerson Physical Laboratory of the University of Chicago writes us that "because of the unfortunate similarity of names, the work has been associated with me" and requests us to ^{so} announce in order that proper credit to Dr. Lehman may be assured.

It is frequently stated that few people under 40 years have cancer, but one-third of the brain cancers and one-fourth of the bone cancers and cancers of the suprarenal glands occur in persons less than 25 years old.

The town of Armageddon, in Palestine, where it was prophesied that the last great battle of the world will be fought, is to be excavated, with a view to studying the ancient cities which have stood on this site.

The President of the United States, Mr. Dwight D. Eisenhower, has issued the following statement regarding the recent developments in the Middle East:

"The situation in the Middle East is a complex one, and it is difficult to see a clear path forward. The United States is deeply concerned about the stability of the region and the well-being of its people. We are committed to a policy of peace and cooperation, and we will continue to work with our allies to achieve these goals."

The President's statement is a clear indication of the United States' commitment to peace and stability in the Middle East. It is a message of hope and reassurance to the people of the region, and it is a statement of the United States' policy towards the Middle East. The President's statement is a clear indication of the United States' commitment to peace and stability in the Middle East. It is a message of hope and reassurance to the people of the region, and it is a statement of the United States' policy towards the Middle East.

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DISINFECTANTS NEED MORE STANDARDIZATION

There are all kinds of germs, strong and weak, hardheaded and easy-going. When you put a disinfectant on a cut, you may kill some germs, but not even frighten others. Disinfectants vary greatly in their efficiency some being good for one thing and some for another.

Dr. G. F. Reddish, bacteriologist of the U. S. Department of Agriculture, declared that the science of disinfection is still in a primitive state, and that it needs complete overhauling and standardization. Practically all the disinfectants in common use are standardized by comparing their efficiency as germ killers to the disinfecting power of carbolic acid on one special type of organism alone, the typhoid bacillus.

Typhoid bacilli are weaklings among germs and are more easily killed by disinfectants than many of the more hardy types. Not only that, but some disinfectants show a peculiar antipathy for certain organisms while they spare others. Pine oil, for example, kills the typhoid bacillus, but does not harm *Staphylococcus aureus*, the most common cause of boils and abscesses.

"Such hit and miss disinfection is the rule at the present time," Dr. Reddish said. "Our disinfectants are undoubtedly good in their place, but their place must be determined. All of our disinfectants should be subjected to a thorough study to determine their best uses. They should be tested against many organisms, both strong and weak, instead of against the typhoid bacillus alone, as they now are."

Dr. Reddish suggests a list of seven disease-producing organisms which he thinks offer a wide enough range for testing the special abilities of disinfectants, such organisms representing the most common bacteria which produce disease. The organisms recommended are those which cause typhoid fever, diphtheria, pneumonia, tuberculosis, plague, boils and blood poisoning.

"Although this scheme of classifying disinfectants will undoubtedly have its difficulties, it nevertheless seems to be the most logical step forward", Dr. Reddish added.

DIVORCE INCREASE NOT
A BAD SIGN, SCIENTIST SAYS

Although the number of divorces in the United States has increased once more and the number of marriages is actually dwindling, according to the U.S. Census Bureau, that is not a sign that the country is fast going to the dogs.

The reason, in the opinion of Dr. Victor C. Vaughan, chairman of the division of medical sciences of the National Research Council, that there are more divorces now, is because women are able to support themselves in comfort and peace, and because there are fewer children to hold drifting couples together.

In spite of flappers and jazz, easy divorce and bootlegging, the morality of the country is no worse today than it was in the good old days when he was a boy, Dr. Vaughan said. Instead of marrying at all costs, and as soon as possible

THE ATLANTIC CITY

There are two main reasons for the existence of Atlantic City. The first is the fact that it is a beautiful beach resort. The second is the fact that it is a gambling center.

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The second reason for the existence of Atlantic City is the fact that it is a gambling center. There are many casinos and gambling halls, and the people who go there are usually looking for a good time.

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a girl today does not marry unless ~~she~~ ~~wants~~ to. It is easy enough for her to get a job, and have silk stockings and earrings all her own. The very helpless damsel is passing like the spinning wheel and the high-boy.

The figures of the Census Bureau show, that in spite of the natural population increase of nearly one and a half million from 1923 to 1924, the number of marriages in that time dropped from 1,223,924 to 1,178,206, or 3.7 per cent, while the number of divorces grew from 165,096 to 170,867.

In 1923 there were 10 divorces for every 74 marriages, but in 1924, the same number of couples got divorces for every 69 marriages. Texas, the biggest state, had the biggest divorce list, and Illinois and Ohio followed after. New York had the most marriages, and Illinois, Pennsylvania and Texas were next.

Divorces in states do not indicate social trends as a rule, but are generally dependent on the nature of the local divorce laws instead.

ELEVENTH COMET OF YEAR DISCOVERED BY SOUTH AFRICAN

The eleventh comet of the year has just been picked up by G.E. Ensor an amateur astronomer at the Cape of Good Hope, where a southern branch of the British Royal Observatory is maintained. It is now in the constellation of Reticulum, the net, and is moving northeast into the neighboring constellation of Horologium, the clock according to Dr. Harlow Shapley, director of the Harvard College Observatory. Both of these constellations are far south of the equator and can only be seen easily from southern latitudes. Its motion, however, may bring it into view in the southern United States, and as it is now of the eighth magnitude it could be seen with small telescopes.

With eleven comets discovered since January 1, some of which were new while others were old friends returning for one of their periodic visits, 1925 will go down in history as one of the most prolific years for comets on record. The nearest approach in recent years to this record was in 1921, during which seven were found, but two of these were doubtful objects whose cometary nature was not fully established. All found so far this year, with the exception of the new one, have been observed by many astronomers and their orbits have been accurately computed. Doubtless other southern observatories will make observations of the new visitor, and as soon as its position at three different times is found, its path can be calculated.

This is the second comet this year to be discovered in South Africa, for on March 24, William Reid an amateur astronomer living near Cape Town, discovered a comet which now bears his name. Another South African discovery of the year was that of a new star in the constellation of Pictor by R. Watson, another amateur astronomer, and a telegraph operator by profession, who noticed a strange star in the heavens when he was returning home from his work in the early morning. Two other of the year's comets were found by Americans, Prof. George Van Biesbroeck, of the Yerkes Observatory and Leslie C. Peltier, an amateur astronomer; while two others were found in Russia.

It is only coincidence that has brought this large number of comets near the earth this year, and no dire results may be expected from them. In earlier times, however, comets were supposed to portend great catastrophes, so it is a matter for thankfulness that most people no longer believe in these old superstitions.

MINING SOCIETY MEDAL PRESENTED
INVENTOR OF SMOKE PRECIPITATOR

Dr. Frederick Gardner Cottrell has been awarded the gold medal for 1924 of the Mining and Metallurgical Society of America. The award is in recognition of "distinguished service in the development of a method of electrical precipitation of solid and liquid particles from smelter smoke and in recognition of his public spirit in making a gift of the proceeds of his invention for the support of scientific research." Dr. Cottrell is at present director of the Fixed Nitrogen Research Laboratory of the U.S. Department of Agriculture in Washington.

DUTCH CHEMIST TO
TEACH AT CORNELL

Prof. Ernest Cohen of the University of Utrecht and president of the International Union of Pure and Applied Chemistry which will meet in Philadelphia next April has been appointed the first incumbent of a new Cornell visiting professorship made possible by an anonymous gift of \$250,000. From February to June he will lecture on the most recent advances of chemistry, and tell of his own original investigations in physical and inorganic chemistry which have won him international distinction.

GYE'S CANCER EXPERIMENTS
BEING REPEATED

A cablegram from Dr. W.E. Gye, of London, whose cancer experiments are attracting great interest among doctors and the public, was read at a special meeting of the Baltimore City Medical Society recently. The message indicated that the delicate tests, which led to startling reports of a cancer micro organism being seen and cultivated, are being repeated in efforts to confirm or disprove the results.

The cable, which was read by Dr. George A. Soper, managing director of the American Society for the Control of Cancer, was a reply to his letter asking Gye and Barnard whether their experiments are being confirmed.

Dr. Soper, who spent three months in Europe recently, investigating cancer research work, stressed the point that such difficult experiments as the work of Gye and Barnard, and the use of lead injections in treatment of cancer, as reported on by Dr. Blair Bell, of Liverpool, must be confirmed by men of at least equal skill.

"The technique of Oye and Barnard is so refined and so delicate that not many scientists in the world are trained sufficiently to repeat their experiments," said Dr. Soper. "The best of cancer investigators are sailing on uncharted seas, and errors are difficult to avoid."

Progress in various angles of cancer research in the United States was described by Dr. William H. Woglom, of the Institute of Cancer Research, at Columbia University.

"Although the laboratories have not yet succeeded in establishing a cure for cancer, the situation is not hopeless," Dr. Woglom declared. "It is not as though we were seeking a cure for hardening of the arteries or some condition where the damage appears to be irreparable. Malignant tumors do sometimes recede. This occurs in scarcely one per cent of spontaneous tumors in mice, and in an infinitely smaller percentage of cases in man; yet the fact remains that the body does sometimes succeed in overcoming the malignant cell."

How nature overcomes the wild cells of a cancer that grows spontaneously in a human being has not been studied because of the rarity of the phenomenon and the difficulty of such investigations. But Dr. Woglom described studies that are being made on rats with transplanted tumors in which the type of tumor that can be overcome by the body is compared with the tumor that flourishes. Study of 7,000 rat cases shows that on about the tenth day the tumor takes a turn that decides whether it is to continue to grow vigorously or to succumb to immunization by the normal body cells.

"There is not a single aspect of the cancer problem that is not under investigation somewhere in the world," concluded Dr. Woglom. "But such work cannot be hurried. False trails must be investigated before they can be recognized as false. Experiments are wiped out by animal epidemics and have to be repeated. The ideal cure for cancer would be some agent, which, after intravenous or subcutaneous administration, could seek out and destroy the cells of a tumor without injuring the normal tissues of its bearer. Needless to say, the laboratory has no such remedy to offer as yet."

FEAR HALTS PROGRESS OF COMMERCIAL AVIATION

Lack of public confidence in aircraft is the fundamental obstacle in the way of the development of commercial aviation today, in the opinion of Dr. J. Parker Van Zandt of the U.S. Army Air Service, who spoke recently before the American Association for the Advancement of Science.

"The average citizen has a vital interest in not being dead, and demands proof of unusual compensations before he willingly submits to added hazards," Dr. Van Zandt said.

Learning how to fly, Dr. Van Zandt explained, was unique among technical accomplishments of modern times. Unlike the telephone, the steam engine, the electric light or the radio, each of which was developed in a short time, the airplane is a tantalizing dream come true only after centuries of effort reaching back to the dim ages of the past.

The testimony of the witness is that he has not seen the defendant since the time of the arrest in 1935. He has not seen the defendant since the time of the arrest in 1935. He has not seen the defendant since the time of the arrest in 1935.

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Learned men had sought for generations a sudden and complete solution of the problem of flying, but the Wright brothers analyzed it and took the full step by step. They studied the methods of others and their mistakes. They put into practice all that previous practice and theory had demonstrated to be helpful, and added the results of their own experience.

They progressed slowly and methodically. They did not expect a machine to fly until it could be balanced successfully. When that problem was solved, then they proceeded to add a propelling motor. Not until their bird had developed good wings did they push it out of the nest.

In four short years from 1899 to 1903, the two young men, still in their twenties, sons of a poor country clergyman, poor and with only a high school education, solved the problem that had defeated the best minds of the world for many generations.

"The airplane today," said Dr. Van Zandt, "represents one solution of the problem of flying. There may be other ways, and far better ones. The plane of the future may differ radically from the aircraft of today. In spite of all our study, we do not yet understand exactly how birds and insects fly."

"But if we are to quickly solve the immediate problem before us, we must concentrate on the method of research used by the Wright brothers. We must make the actual trials under carefully controlled and intelligently selected conditions. When aircraft have once become established as safe and useful vehicles, we will not be so far removed from the day when every man's doorstep will be a pier on the shore of a navigable ocean."

STUDIES RACE RELATIONS OF YELLOW AND WHITES

Observing and studying the human reactions that ensue on the Pacific coast of Canada and the United States where the strange substance of Oriental civilization impinges upon that of Western culture, is the delicate job of the Institute of Social and Religious Research of New York City whose work was described by Prof. Eliot Grinnell Mears, of Stanford University, California before the American Association for the Advancement of Science.

Information on how the refractory human elements react upon one another is obtained from histories and other data of Orientals, either written by themselves or told to investigators. The white man's side is obtained from persons who have had first-hand contact with the Orientals. Further information is gotten from official bodies, racial groups and private organizations and individuals.

Noteworthy changes observed in recent years, Prof. Mears said, have been the absolute decrease in the Chinese population of the United States, and the dwindling rate of increase among the Japanese, the movement from country to the city, the influx of Mexicans, and the friendly feeling toward the Chinese.

The work of the survey is to unravel at this late, but not too late, date, whether the alien races are a liability or an asset to the Pacific Coast, or the white man to them, and to obtain a body of facts which, as Prof. Mears said, "can make us individually wise, even if we should lapse into political foolishness."
